

March 15, 2017

Tom Moe
USS Corporation
P.O. Box 417
8771 Park Ridge Dr
Mountain Iron, MN 55768

RE: Project: USS MinnTac NPDES Line 3 Wkly
Pace Project No.: 1283905

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Melisa M Woods
melisa.woods@pacelabs.com
(218)742-1042
Project Manager

Enclosures

cc: Cory Hertling
Terri Sabetti, NTS



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CERTIFICATIONS

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283905

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification UST-107

Alaska Certification UST-107

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE SUMMARY

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283905

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1283905001	WS-002 Scrubber Make-up	Water	03/08/17 09:00	03/09/17 10:42
1283905002	WS-003 Thickner Overflow	Water	03/08/17 08:50	03/09/17 10:42

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE ANALYTE COUNT

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283905

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1283905001	WS-002 Scrubber Make-up	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1283905002	WS-003 Thickner Overflow	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283905

Sample: WS-002 Scrubber Make-up Lab ID: 1283905001 Collected: 03/08/17 09:00 Received: 03/09/17 10:42 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Calcium, Dissolved	106	mg/L	5.0	0.058	10	03/09/17 16:23	03/10/17 13:00	7440-70-2	
Magnesium, Dissolved	237	mg/L	5.0	0.64	10	03/09/17 16:23	03/10/17 13:00	7439-95-4	
Total Hardness, Dissolved	1240	mg/L	100	2.8	10	03/09/17 16:23	03/10/17 13:00		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	868	mg/L	20.0	10.0	10		03/10/17 23:46	14808-79-8	

Sample: WS-003 Thickner Overflow Lab ID: 1283905002 Collected: 03/08/17 08:50 Received: 03/09/17 10:42 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Calcium, Dissolved	859	mg/L	5.0	0.058	10	03/09/17 16:23	03/10/17 13:04	7440-70-2	
Magnesium, Dissolved	87.9	mg/L	5.0	0.64	10	03/09/17 16:23	03/10/17 13:04	7439-95-4	
Total Hardness, Dissolved	2510	mg/L	100	2.8	10	03/09/17 16:23	03/10/17 13:04		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	1880	mg/L	40.0	20.0	20		03/11/17 00:08	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283905

QC Batch: 107831

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 MET Dissolved

Associated Lab Samples: 1283905001, 1283905002

METHOD BLANK: 426922

Matrix: Water

Associated Lab Samples: 1283905001, 1283905002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.0058	03/10/17 11:58	
Magnesium, Dissolved	mg/L	ND	0.50	0.064	03/10/17 11:58	

LABORATORY CONTROL SAMPLE: 426923

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	50.7	101	85-115	
Magnesium, Dissolved	mg/L	50	50.2	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 426924

426925

Parameter	Units	1283848001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	12.5	50	50	62.1	62.1	99	99	70-130	0	20	
Magnesium, Dissolved	mg/L	34.9	50	50	84.8	83.7	100	98	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 426926

426927

Parameter	Units	1283694001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	15.1	50	50	64.5	64.1	99	98	70-130	1	20	
Magnesium, Dissolved	mg/L	19.0	50	50	69.1	68.3	100	99	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283905

QC Batch: 107905

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1283905001, 1283905002

METHOD BLANK: 427144

Matrix: Water

Associated Lab Samples: 1283905001, 1283905002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	1.0	03/10/17 12:40	

LABORATORY CONTROL SAMPLE: 427145

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	50.8	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 427146

427147

Parameter	Units	1283937001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	435	250	250	690	690	102	102	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 427148

427149

Parameter	Units	1283943001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	38.4	50	50	87.9	87.9	99	99	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALIFIERS

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283905

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283905

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1283905001	WS-002 Scrubber Make-up	EPA 200.7	107831	EPA 200.7	107876
1283905002	WS-003 Thickner Overflow	EPA 200.7	107831	EPA 200.7	107876
1283905001	WS-002 Scrubber Make-up	EPA 300.0	107905		
1283905002	WS-003 Thickner Overflow	EPA 300.0	107905		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



CHAIN-OF-CUSTODY / Analytical Request
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed.

W0# : 1283905
PM: MMW
CLIENT: USS CORP
Due Date: 03/23/17

Section A Required Client Information: **Section B** Required Project Information: **Section C** Invoice Information:


Company:	USS Corporation	Report To:	Tom Moe	Attention:	
Address:	P.O. Box 417	Copy To:		Company Name:	
Mt. Iron, MN 55768		Purchase Order #:		Address:	
Email:		Project Name:	NPDES-LINE 3 Wky	Pace Quote:	
Phone:		Requested Due Date:		Pace Project Manager:	heather.zika@pacelabs.com
				Pace Profile #:	

ITEM #	MATRIX	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analyses Test	Y/N	Requested Analysis Filtered (Y/N)										Residual Chlorine (Y/N)	SAMPLE CONDITIONS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
					START	END	DATE	TIME						DATE	TIME	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other			LAB FILTERED: SO4	Lab FILTERED: Ca,Mg,Hard																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Paul Moe	3-8-17	16:55	MMW	3-8-17	16:55	25.5	Y	N	Y

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER:	Paul Moe
SIGNATURE of SAMPLER:	Paul Moe
DATE Signed:	3-8-17

	Document Name: Sample Condition Upon Receipt Form	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name:

Project #:

WO#: 1283905

PM: MMW

Due Date: 03/23/17

CLIENT: USS CORP

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client
☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☐ No Optional: Proj. Due Date: _____ Proj. Name: _____

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: _____ Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.2 Cooler Temp Corrected °C: 2.5 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA
Temp should be above freezing to 6°C Correction Factor: 10.13 Date and Initials of Person Examining Contents: 3-9-17 MMW

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

Date: 3/9/17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)